Control Room III

A great deal of activity at WYBC centers around the recording of the human voice and the modification of already existing tapes and recordins to our own needs. Control Room III and the Recording Studio are used primarily for that purpose. In addition, one live program, Talk of the Town, normally originates in Studio III. CR III contains two turntables, one double channel console, two built-in tape recorders (an Ampex 351 and an Ampex 602) and a great deal of peripheral equipment (i.e. a microphone, cue system, patchboard, etc.). The portable 351 is often found in this room also.

In general, Studio III is the source of all live recording and contains the microphones and furniture essential to this purpose. There are a number of female cannon plugs in the walls and floor which carry the microphonic signals into the Control Room. Each is numbereed at both ends.

Just below the Studio mike outputs on the blue-paneled rack in CR III are five cannon plugs (male) which are the microphone inputs to the console. They appear on Pots 2-6 respectively. The CR mike appears as a normal (i.e. needs no patching) on Pot 7. The two turntables in the room are similarly normalled into Pots 8 and 9 respectively. These are the only pots on the console which have a cue position. All other inputs to the console must come through one of the nine remote circuits available to the console, though, as a rule, a maximum of two external signals can be mixed at once. Although these external sources must come through the remote system

mentioned above and appear on either Pot 1 or Pot 10, they need not always be patched through the patchboard (cf. below). At the moment, every remote in CR III has a normalled input, an input that is superseded by any source which is patched into the corresponding remote patch. Each normal is clearly labelled above its respective button.

The console itself, an old Collins model, has two completely separate internal channels, Channel 1 and Channel 2, and two completely independent outputs, Line 1 and Line 2, such that it is possible to control two separate and distinct programs through this console. The switches that match either Channel with either Line are located just to the medial end of each row of remote buttons. Each Channel has its own VU meter and its own master amplifier, controlled by the respective channel pot (right-hand side of the console). Each of the microphone pots has an associated relay to cut the appropriate speaker (monitor), either in the Control Room or in the Studio. This eliminates the possibility of feedback. The CR monitor can be fed from either Channel and its volume controlled by the left-hand pot in the second row.

CR III also contains a tape cartridge machine with both playback and record units. Inputs to and outputs from (aside from the normalled output) are available through the patchboard located directly underneath the record unit.

The patchboard contains breakpatches for the program lines out of the console, remote patches for inputs to the console, tel patches to bring signals from the telephone terminal box, bus patches for inter-studio communication, various monitor

patches, and patches to get in and out of the cartridge machine, the 351, and the 602.

The room also contains two bulk erasers for magnetic tape and other equipment for splicing and editing tapes.

Control Room II

In general, Contrl Room II is the origin of FM Programing. The Contrl Room consists of two main parts, the console and the patch board and monitoring devices at the operator's back.

The console is a Collins 212s-1 stereo console. Its output is a single line; that is, only one program at a time can be sent through the 212s-1. (As opposed to the CR I console, which can theoreticall send out two programs simultaneously.) The console is specially designed to send out a stereo program, although a monoaural program can be sent through it by sending the same signal through both channels.

On the operator's left and right are Gates turntables. The on-off switch and speed selector are on the turntables.

On the far left of the console is the christmas tree. The christmas tree is a switching device that determines what station (640, 540, or 94.3) is originating in what control room. To demonstate its use, let's go through a sample station switch. To start, 640 is coming from CR I and must be switched into CRII. The button marked "640 CR 2" is pressed so it blinks red. At the moment of switch, the button marked "execute" is pressed and the "640 CR 2" button turns a steady green, indicating the station switch has been made.

Chapter Two

You should be familiar with most of the console. On the top part, the part with a white background, the important feature are the VU meters. These monitor the levels on the left and right stereo channels, respectively. On the right is the monitor level pot and the monitor function selector, with self-explanitory markings. On the far right are function toggles for remote lines one to four. In the up position, they cut into the air line. In the down position they put the remote input on the cue speaker, when the cue speaker function switch is in the "RMT" (remote) position. These switches for the remotes are normalled as labelled.

In the center of the bottom section of the console is the cue speaker. Below it are cue level potentiometers and function switches.

There are six mixing pots on the console, each operating in the same fashion. The pot itself controls the level. The upper toggle selects the function, or the input to come into that pot. For example, mixer 1 brings in remote 5 in the left position and remote 8 in the right position. The bottom toggle puts this input either on the output line ("PGM") or on the audition monitor ("AUD").

On the far right of the console, in the top section, are earphone controls similar to those for

the monitor. Below are on-off buttons for the 640 and 540 trasmitters, FM, and the stereo function of the console. THE STEREO BUTTON SHOULD LEGALLY BE OFF WHEN BROADCASTING NON-STEREO PROGRAMMING FOR MORE THAN A FEW MINUTES.

Now to the meters and other monitors behind the operator. On the left panel, at the top is the frequency deviation meter. It tells how many cycles from 94,300,000 cycles our signal really is. Below are meters for, from left, total voltage our transmitter is putting out, total amperage, and total current at the antenna. The product of meters one and two, times a factor set by the transmitter manufacturer, is the total output power, hopefully one thousand watts. The readings from all four meters should be entered on the transmitter log every half hour, and THEN adjusted to appropriate values.

Below is a McIntosh AM-FM tuner, identical to the component in any hone stereo system. It can be used to tune our monitors to any radio station. Usually it is tuned to 94.3.

On the top of the right panel is the McMartin FM stereo monitor. It contains VU meters similar to those on the console. The difference is that the console meters monitor the signal coming in; the McMartin

monitors the signal coming out.

Below is the CBS Audimax. THE AUDIMAX IS THE FINAL AUTHORITY ON OUR OUTPUT LEVEL. In general, it should read between +7.5 and +10. IF THE AUDIMAX IS PINNED OVER +10, YOUR LEVEL IS TOO HIGH, NO MATTER WHAT ANY OTHER METER SAYS. Below the AUdimax is a signal generator used for test and repair purposes.

This brings to the patchboard. The CR II patchboard is the main patchboard in the station. There are three types of patches: break, bridge and bus. A break patch diverts the signal into the patch cord. It breaks the signal, which can no longer continue on its original path. In other words, if 640 is on the air in CR I, and you put a patch cord in the CR I O patch, you take 640 off the air. Needless to say, care should be used with break patches. All break patches are marked in red on the board.

Bus patches carry a signal from one contrl room to another. If you plug a microphone in Bus A in CR II, then plug Bus A in CR I into the CR I console, speaking into the mike in CR II will produe a signal on the CR I console.

Bridge patches extract a signal, but do not break the original signal path. Bridge patches are used to monitor or to bring a signal into a console without breaking the original signal path.

Control Room I

From the first Saturday of the heel until its conclusion in April, CR I will be the center of the heeler's on-the-air broadcast training. On the other hand, his exposure to the operation of CR II may be somehwat limited, but many fundamental techniques of broadcasting are common to both AM and FM programming and may easily be learned and practiced in CR I.

Control Room I, properly called the Clark Memorial Control Room, is the origin of nearly all of WYBC;s rock programming and contains, in addition to the finest AM broadcasting equipment in New Haven, a vast collection of rock and roll recordings dating back to 1954. The room has recently been refurbished and provides a welcome change from the dull surroundings that greeted last year's heelers.

The heart of CR I is the Altec-Lansing 250-A console. This piece of equipment was formerly the FM console in CR II. In the spring of 1966, it was replaced by the Collins stereo console presently in use, as part of our conversion to FM stereo. The design of the 250-A is ideal for rock broadcasting, as easily accessible controls and color coding make it easy to learn and operate, while hinged construction facilitates repairs and maintenance. One drawback, however, is that the unit has been disowned by its manufacturer and direct replacements are not available - a great headache to our tech department.

In addition to the console, CR I contains other equipment to help the announcer produce a tight, professional air product. On both sides of the engineer's chair are new Collins

"instant-start" turntables. To his right are two ATC automatic tape cartridge machines. All of these instruments can be controlled (and normally are) from the cluster of buttons directly in front of the engineer. The rack ~~to the~~ to the left contains tape cartridges on which various jingles, intros, and commercial announcements are recorded. The microphone, an Electro Voice 666R cardiod, is so mounted that the announcer may either engineer his own show or sit opposite the control board while another person operates the board. The former practice is called combo-ing. Just behind the engineer is the reverberation unit which makes even the weakest voice sound professional.

Although a 640 broadcast may be completely controlled from CR I, there are other pieces of equipment between the console and the receiver on the Old Campus. The console merely mixes the low-level voice and music signals, amplifies them, and sends them to the christmas tree, in CR II. This automatic switching device sends the signal to either of the AM transmitters in the basement of Hendrie Hall. The 640 unit (Ray), manufactured by Raytheon, operates at a power of 250 watts. The outputs of both the 640 and 540 transmitters are joined by the diplexer, a unit that allows both signals to be transmitted through the same coaxial cable. It is through this cable that WYBC's AM broadcasts are distributed, via the Yale steam tunnels, to every college and to various other buildings. Each branch terminates in a device which injects the signal into the electrical system of that building. Thus, in this carrier-current system, the electric wiring of each college serves as the anteenna.

B.K.K.